REMARKS/ARGUMENTS

In amended Fig. 1, fluid control valve 20 has been corrected to correspond to the fluid control valve 20 of Fig's 2-4, and previously omitted element numbers 150 and 220 have been added.

Reconsideration of the claims is respectfully respected. No new matter has been added by this amendment.

Claims 1-6, 8 and 17-19 remain in the application.

Claims 7, 9-16 and 20 have been withdrawn from further consideration. In view of the Examiner's earlier restriction requirement, the applicant retains the right to present claims 7, 9-16 and 20 in a divisional application.

Claims 1 and 17 have been amended for clarity and to claim the invention to which the applicant is entitled.

Specifically, the fluid control valve of Claim 1 has been amended to include first and second fluid passages open to the bore and the movable member movable in the bore to control the passing of fluid flow between the first and second fluid passages. Claim 1 has been further amended to clearly define the location of the vent passage between the first and second fluid passages and the actuator. Claim 1, as amended, clearly distinguishes the invention over the references of record, taken singularly or in combination, and places the invention of claim 1 in condition for allowance.

Claim 17 has been amended to focus on a method of reducing flow forces in a fluid control valve and the related steps associated with the reduction of fluid forces acting on a movable member of the control valve within the bore of the control valve body. Claim 17, as amended, clearly distinguishes over the references of record, taken singularly or in combination, and places the method of claim 17 in condition for allowance.

Claim 18 has been amended to correct errors of transcription and provide proper antecedent basis.

The Examiner rejected claims 1-6, 8 and 17-19 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,478,045 (Ausman).

Regarding Claim 1, the Examiner indicated that the Ausman reference discloses a valve comprising a body (198 and 232), a fluid passage 264, an axial bore 260, a movable member 204, an actuator 88, and a first vent passage which vents leakage fluid (passing check valve 208 is in, see col. 22,lines 12-15).

The undersigned has reviewed the Examiner's comments and finds some difficulty in seeing how the teachings of the Ausman reference relates to the claimed invention. The instant application is directed to a fluid control valve, which controls the flow of fluid between the first and second fluid passages. The structure recited above by the Examiner is not related to a fluid control valve but to a fuel injector and specifically to an intensifier piston 88 and a plunger 204 which pressurizes fuel for injection by a fuel injector nozzle.

Further, what the Examiner is identifying as a vent passage is not a vent passage as claimed in the instant application. Passage 214 and check valve 216 of Ausman do not vent. Passage 214 and check valve 216 require actuation of the intensifier piston by high-pressure oil to cause pressurization of any leakage fluid on the backside (opposite side) of the intensifier piston and the pumping of the leakage fluid past the check valve 216. It should be noted that the check valve would not open unless there is adequate fluid pressure in the passage 214. To those skilled in the art pumping is not the same as venting.

Further, Ausman does not have a vent passage which opens into the axial bore at an axial location relative to said axial bore between said first and second passage and said actuator and does not vent leakage fluid in the axial bore at the axial location of the vent passage between the first and second fluid passages and the actuator. Passage 214 of Ausman clearly opens into the chamber 192 and not into the bore 212 or 156.

Regarding claim 2, the Examiner indicated that the movable member 204 (plunger) of Ausman has a valve element portion (end of element 204 which closes passages 262 and 264 during pumping. The applicant traverses this rejection since the element 204, which is a piston for pumping fluid, has no provisions for closing off either of the passages 262 or 264. The plunger 204 does not contact the bottom of chamber 260 during operation.

The Examiner indicated that claims 3-6 were also supported by the teachings of Ausman. The applicant also traverses these rejections since the elements recited by the

Examiner are not related to a valve but to an intensifier piston and plunger and do not function in the same manner.

Regarding claims 17-19, the Examiner indicated that the method of claim 17 is inherently performed by the normal use of the Ausman device. The Applicant respectfully disagrees since the method of independent claim 17 is: 1) directed to a method of reducing fluid forces acting on a movable member of a fluid control valve; 2) the movable member being movably disposed in a bore disposed in a body of the fluid control valve and movable in the bore relative to a body of the fluid control valve, and 3) venting leakage fluid from the bore at a location between the actuator and a fluid passage. Since the structure of Ausman does not vent the bore and is not concerned with the fluid forces in the bore it is unlikely that the method of the invention of claim 17 is inherently performed by Ausman.

It is respectfully submitted that amended independent claims 1 and 17 and claims 2-6, 8 and 18-19 which depend therefrom distinguish over the references, taken singularly or in combination, and are now in condition for allowance and allowance of the instant application at issue is respectfully requested.

Respectfully submitted,

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AMENDMENTS TO THE DRAWINGS:

The attached sheet of drawings includes changes to Fig. 1. This sheet replaces the original sheet. In Fig. 1, previously fluid control valve 20 has been corrected to agree with the drawings of the fluid control valves of Fig's. 2-4. In Fig. 1, previously omitted elements 150 and 220 have been added.

Attachment: Replacement sheet
Annotated Sheet Showing Changes

"ANNOTATED SHEET SHOWING CHANGES"
Title: FLUID CONTROL VALVE
Inventor: Kenneth Adams et al. Atty. Docket No.: 03-150

Fig. 1